

REMARKS

Applicant has received and reviewed the Final Office Action mailed by the Office on March 26, 2007 (hereinafter, "Final Action"), and submits this response to the Final Action with a request for continued examination (RCE).

Claims 1-38 were pending in the present application. Applicant amends independent Claims 1, 15, 24, and 35 to clarify claimed subject matter and/or correct informalities. The original specification and drawings support these claim amendments at least at pages 19-22, 25-29 and in Figure 5. Therefore, these revisions introduce no new matter and do not change the scope of the claims.

Claims 1-38 are for consideration upon entry of the present Amendment. Applicant requests favorable consideration of this response and allowance of the subject application based on the following remarks.

Previous Objection to the Drawings

Applicant appreciates Examiner's withdrawal of the objections to the drawings in the previous Office Action.

Claim Rejections 35 U.S.C. §101

Claims 24-34 stand rejected under 35 U.S.C. §101 as being allegedly directed to non-statutory subject matter. In the previous response, Applicant amended these claims to recite the feature, "computer-readable storage media". Support may be found in the specification at least at pages 25 to 29. Therefore, these revisions introduce no new matter

and do not change the scope of the claims. Claims 24 to 34 are in condition for allowance. Applicant respectfully requests withdrawal of the §101 rejections.

Claim Rejections 35 U.S.C. §103

Claims 1-38 are rejected under 35 U.S.C. §103(a) as being unpatentable by non-patent literature titled “Efficient Filtering of XML Documents for Selective Dissemination of Information” by Mehmet Altinel, et al., 26th VLDB Conference, 2000, page 53-64 (hereinafter “Altinel”) in view of non-patent literature entitled “On Efficient Matching of Streaming XML Documents and Queries” by Sailaja et al., University of British Columbia, Canada, 2002, pages 1-20 (hereinafter “Sailaja”). Applicant respectfully traverses this rejection.

Without conceding the propriety of the stated rejections, and only to advance the prosecution of this application, Applicant amends independent **Claim 1**, to clarify further features of the subject matter. Amended independent **Claim 1** now recites a method, comprising:

- receiving an input, wherein the input comprises elemental language units;
- generating at least some of the elemental language units into opcodes;
- merging opcodes into an opcode tree, wherein the language units have been parsed and compiled into opcodes;**
- traversing the opcode tree of hierarchical nature that includes a plurality of opcode nodes which together define opcodes that should be executed to evaluate a plurality of queries;
- executing each of the opcode nodes in the opcode tree as each opcode node is encountered in the traversal to evaluate the plurality of queries against the input;
- indexing branch opcodes to provide a framework for insertion of indexing techniques that are customized to a type of comparison;**
- maintaining the opcode tree that is used during processing by making a copy of the opcode tree; and

updating the opcode tree copy;
**wherein a relationship between the opcodes and the opcode tree is
embedded in the opcodes that is created when a query is complied.**

Applicant respectfully submits that no such method for inverse query evaluation is taught or suggested by Altinel or Sailaja.

Altinel and Sailaja Fail to Teach or Suggest Features of Claim 1

Altinel is directed to XML-based SDI system and the XPath language (page 54, section 1). The evaluation of XPath pattern yields an object whose type can be either a node set (i.e., an unordered collection of nodes without duplicates), a boolean, a number, or a string (page 54, section 2.2). The SAX event-based interface reports parsing events and does not usually build an internal tree (page 57, section 4.2). In Altinel, the document generator always starts from the root of the DTD, while the query generator may start at any level depending on which element node it initially chooses (page 60, section 6.2). Thus, Altinel fails to teach or suggest “merging opcodes into an opcode tree, wherein the language units have been parsed and compiled into opcodes; indexing branch opcodes to provide a framework for insertion of indexing techniques that are customized to a type of comparison; wherein a relationship between the opcodes and the opcode tree is embedded in the opcodes that is created when a query is complied”, as recited in Applicant’s Claim 1.

Applicant asserts Sailaja fails to compensate for the deficiencies of Altinel. Sailaja describes P is a unique node which corresponds to the element returned by the query (page 2, section 1), which is not the same as “the input comprises elemental language units”, as recited in Applicant’s Claim 1. Sailaja describes order predicates, which states an order

predicate *u* must precede *v* in any matching (page 5, section 2). Furthermore, Sailaja describes an example of query *Q*, where the element **BRAND** appears before the **NAME** element (page 4, section 2). In contrast, Applicant's Claim 1 generates elemental language units into opcodes, which are machine language instruction that specifies the operation to be performed (see definition in webopedia.com; en.Wikipedia.org/wiki/opcode).

Applicant asserts Altinel and Sailaja, alone or in combination, do not teach or suggest "merging opcodes into an opcode tree, wherein the language units have been parsed and compiled into opcodes; indexing branch opcodes to provide a framework for insertion of indexing techniques that are customized to a type of comparison; wherein a relationship between the opcodes and the opcode tree is embedded in the opcodes that is created when a query is complied", as recited in Applicant's Claim 1.

The evidence is insufficient to support a *prima facie* obviousness rejection of the claimed subject matter. Applicant respectfully submits that the cited references do not render the claimed subject matter obvious and that the claimed subject matter, therefore, patentably distinguishes over the cited references. For all of these reasons, Applicant respectfully requests the §103(a) rejection of these claims should be withdrawn.

Independent Claims 15, 24, and 35 are directed to a system, a computer-readable storage media, and a method, respectively. Each of these claims are allowable for reasons similar to those discussed above with respect to Claim 1.

Dependent Claims 2-6, 16-23, 25-34, and 36-38 depend directly or indirectly from one of independent Claims 1, 15, 24, and 35, respectively, and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features

that, in combination with those recited in Claim 1, are not taught, or suggested by Altinel and Sailaja


Conclusion

Claims 1-38 are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of the subject application. If any issue remains unresolved that would prevent allowance of this case, the Office is requested to contact the undersigned attorney to resolve the issue.

Respectfully Submitted,

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Dated: 9-26-2007

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